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EXPLORATION OF THE LOWER AMUR VALLEY

By GERARD FOWKE

The researches herein reported were carried on during the working season of 1898, for the American Museum of Natural History of New York. Investigation was confined strictly to the last 350 miles of the Amur river and to the coast from its mouth to Okhotsk sea.¹ Facts stated and opinions advanced are not intended to include a wider range than the immediate vicinity of the shores.

Before the advent of the Russians, from 1855 to 1860, the natives' diet was confined almost exclusively to meat and fish. The Amur is one of the great salmon streams of the world, though at present Japanese and Russian fishermen succeed in catching the greater portion of the run near the mouth of the river. The main dependence for animal food was the flesh of the elk; these came down in summer from the mountains to feed on the abundant vegetation along the river, and hunters lay in wait for them around the margins of swamps. No shell-fish exist in the region examined, or at least none accessible at the time of need, except a sort of periwinkle or water-snail; these are not used as food at the present time, nor is there any evidence that they ever served this purpose. The absence of shell-fish may be accounted for by the fact that the water of the Amur contains only a very small amount of lime in solution (evidenced by it lathering freely with any kind of soap), and the swift current carries to the sea all clayey sediment, such as is ordinarily deposited by large streams, leaving only sand and gravel in its bed and along the shores. One may walk for miles on the beach after a heavy rain without soiling his shoes.

Possibly some items may have been added to the meager dietary through barter with Manchus, but not enough to be of material value. In summer, while vegetation is abundant, the natives consume quantities of various herbs which grow spontaneously, with

¹ A brief abstract was printed in *Science*, April 14, 1899.

an especial predilection toward garlic or wild onions ; but they have never made the slightest attempt at cultivating the soil until quite recently, and at the best they take no interest in raising crops of any sort except on a very small scale, when they have been urged to do so by the advice and example of the white settlers.

Bone, wood, and fiber seem to have been the primitive materials for nearly all tools, implements, and utensils. Flint or any allied substance adapted to the manufacture of arrow or spear heads is not to be found. Stone suitable for other objects is rare ; it occurs only in the form of water-worn pebbles or small boulders which are not at all plentiful, being confined to limited and widely separated areas along the shores. For many kinds of work they may have been used in their natural forms.

Careful investigation failed to reveal any distinct evidence of a prehistoric people differing in their manner of living from those now occupying the region. Every place at all suitable for a village-site, every stretch of shore or exposed bank bordering on a spot that would seem to hold out to persons in any condition of life the slightest inducement for even temporary occupancy, was thoroughly examined, but usually with negative results. No flint implements were discovered, though a few arrow-heads labeled "from the Amur River," and supposed to have come from this region, are to be seen in the museums at Khabarovsk and Vladivostok. These specimens, or at least the stone of which they are made, may well have been brought from another locality. Some chipped as well as some polished celts were found ; these are quite small, and most of them have the beveled edge which indicates use as scrapers or skin-dressers. Fragments of pottery are abundant in numerous places, on almost every beach in fact that offers a good fishing station. Most of them are pronounced, by both natives and Manchus, to be of "Chinese" (Manchu ?) manufacture. The pieces attributed to local handiwork are mostly rough and of coarse material, with slight endeavor at any sort of ornamentation ; usually they are quite poorly made.

No investigations away from the river were attempted ; the primitive wilderness, with its dense growth, is almost impenetrable, and no one has, or has ever had, a permanent home beyond its borders.

Native hunters of fur-bearing animals are accustomed to make their winter camps not more than five or six miles away from home, and go prepared to remain in them for weeks or months at a time. Not even trails are to be found through the forests or along the river banks ; aside from the usual difficulties of making a road under such conditions, the innumerable marshes, lakes, sloughs, and bayous are absolutely impassable. The many tributaries and inlets equally prevent extended journeying along the river shores. So all travel must be by water ; in boats during four months of summer, on sledges or sleighs drawn by dogs or horses during four months when the river is frozen, while for two months in spring and a like period in fall all traffic is suspended.

The Amur below Khabarovsk embodies the drainage channels of a series of former lakes. Wide bottom lands alternate with gorges and receding rocky shores. The former are the silt deposits in the basins of the extinct sheets of water ; the latter mark the barriers by which the ancient lakes were restricted. The rocky portions of the channel have not yet been eroded to a depth which permits the formation of terraces in the flat border-lands ; when the river overflows its immediate banks the water nearly everywhere stretches to the high lands on both sides. There are some exceptions to this rule in places where local conditions have modified the general plan and brought about a different arrangement of topographical features. Such exceptional benches are usually limited in extent, especially so as to their width. Even if those instances in which the bed-rock reaches to the river's shores be included, there are not many level tracts on the Amur above the reach of the highest floods ; consequently, as the native villages must be located close to the water, most of them are subject to overflow. Occasionally, though not often, there is a bluff or low hill favorably situated for occupancy ; but approach to such elevations from the river is generally somewhat difficult and preference is given to more easily accessible stations, despite the certainty of future inconvenience. Apparently, like many higher in the social scale, the Amur people submit philosophically to preventable hardships merely because they regard such matters as part of the natural course of events ; their fathers lived so and it is not for them to violate precedent.

The Russians protect themselves with substantial log houses put together in a manner that bids defiance to the violence and cold of wintry gales, but the natives seem averse to the form of energy required in erecting such buildings. They prefer to cling to their own style of building, despite the fact that it involves the expenditure of a considerably greater amount of labor in producing less satisfactory results. Perhaps, however, the native looks at the latter part of the proposition from a different point of view. In summer, when camping, a hut or tent affords all the protection that is deemed necessary. The simplest form is constructed somewhat like an Indian wigwam, with a number of poles tied together at the top and spread apart at the bottom, this framework being covered with bark or skins, or sometimes nowadays with canvas. To accommodate a larger number, posts are set in the ground and provided with cross-poles and rafters, to which bark is fastened with tough twisted vines, the roof being held in place by stones and poles. This structure may be used for several successive summers. The winter, or permanent, dwelling is constructed practically as follows: A suitable site having been selected, there is marked off a space whose size is determined by the number of persons for whom accommodations are to be provided. The earth within this area is cleared out to a depth varying according to circumstances, but usually about two feet. Should the ground be low-lying or difficult to penetrate, the pit may be shallower; but if easily removed, or well underdrained, the depth may be considerably increased. Posts are set around the margin of the excavated area, with poles and twigs lashed to them horizontally and vertically to form a wattle; mud is thickly plastered over this on both sides. The roof is similarly wattled and plastered on top. Earth is then banked up against the wall on the outside, and spread over the roof, in such amount as may be requisite for protection against the elements. Should the earth removed from the house-site be insufficient or unsuitable for this purpose, more is obtained by digging in any convenient spot. Little pits due to this borrowing are to be seen at every village-site, occupied or abandoned.

In one corner, a fire-place is made of stones built up somewhat like a dome or in the shape of an old-fashioned straw bee-hive. An

opening is left at the bottom for supplying fuel ; and another at the top, into which a large iron kettle is set. From this stove, or furnace, flues lead around the room next to the wall. Each flue consists of two parallel rows of flat stones, set on edge and covered with similar slabs. If stones of proper form are not easily obtainable, bowlders are substituted ; all interstices in the fire-place and flues are closely chinked with mud. There may be three or four of these flues in large houses ; and perhaps another furnace in a corner opposite the first. All the flues finally unite in one, which, after passing through the wall, is carried from 15 to 30 feet outside, where it terminates at a chimney. This may be formed of a log hollowed out like a trough, with a board fastened over the open side ; or it may be made entirely of boards. It is from 10 to 15 feet high, and has a draft ample for the demands made on it. Over the flues sand and fine gravel are piled, held in place at the front by boards and carefully leveled on top, thus forming a raised platform on which the whole family practically lives when indoors. So long as a fire is kept up, the platform is warm and dry.

More or less repair to the walls and roof is necessary after every storm ; with every freeze and thaw also their integrity is impaired. The wattle itself in time yields to age and moisture, and the house becomes untenable. But the inmates do not always await such notice of eviction. A flood beyond the ordinary, causing inconvenience or discomfort ; a period of unusual cold ; the failure of a hunting or fishing expedition ; a bad dream of the " head man " ; an omen of impending trouble or misfortune, or even a slighter appeal to their superstitious fancy, will cause the entire population of a village to pack up incontinently and seek another location. The house thus abandoned soon sinks to decay. The earth piled around its base, reinforced by that falling from the walls, stands as an embankment around the depression within. If the roof timbers give way while the earth still remains on them, the cavity will be shallower to that extent ; should the roof remain intact until the earth washes off, which, if neglected, it will soon do in the very heavy rains prevalent at certain seasons, the embankment is thereby proportionally elevated. When the house remains in use for a long period, the roof will require several renewals on account of this

denudation ; thus the height of the surrounding wall, as compared with the depth of the central portion, may be considerably augmented. Consequently the sites of two houses identical in fabrication may differ greatly in appearance after all the perishable parts have yielded to decay ; one may seem to have had its floor much deeper than the floor of the other. Such dissimilarity can have no bearing upon either the actual or the relative age of two abandoned houses, but, at the most, can only suggest that one was probably occupied a greater length of time than the other.

In referring to measurements hereafter, the figures indicating breadth or diameter will represent the horizontal distance between opposite points on the embankment ; while depth will mean the vertical distance from the top of the surrounding wall to the bottom of the enclosed pit as both now exist.

The word "house-pits" is the closest interpretation of the native name by which these depressions are known. They are regarded, wherever found, as abodes of "the old people." This term signifies simply people who lived at the locality before the present inhabitants came, and has no reference either to the time of the earlier occupancy or to the identity of the dwellers.

With these preliminary remarks, applicable to the territory occupied at this time by the two native tribes of Golds or Goldi, and Gilyaks, a more detailed account of the expedition may be taken up. The names of villages or other places are phonetically spelled according to the pronunciation given by either Russians or natives.

On the right bank of the Amur, somewhat more than 200 miles below Khabarovsk, is a station of the Russian Imperial Post Service. It has no specific name, being merely a place for changing horses in the winter. The native village of Halba is situated two versts (verst = 3,500 English feet) below it. From the station a smooth, gently-sloping gravel beach extends about six versts down the river, terminating at a narrow stream which is the outlet of a lake or lagoon covering probably fifty acres. The beach borders a strip of level bottom land ; between this and the mountains at the back is a wide swampy tract. Elk and game of other varieties resort to the lake, while wild fowl in season throng the marsh. The

beach, which affords a most excellent place for landing canoes and hauling seines, was deemed a good spot for beginning operations.

A verst above Halba are a dozen or more house-pits, from 20 to 40 feet in diameter, and from 3 to 6 feet deep. The sides have attained their final slope. Owing to the profuse growth of brush, weeds, and vines, especially blackberry and wild rose bushes, the exact number of pits could not be ascertained, and no digging was attempted.

Two versts below Halba is the native village of Belgo; here are fifteen or twenty pits similar to those just mentioned. Here also obstacles such as before encountered prevented accurate count. Across one pit, measuring 25 feet from side to side and 4 feet deep, a trench was carried. In the center, 2 feet below the present bottom, a space 3 by 4 feet with a maximum depth of six inches, was burned to a bright red. No ashes or charcoal lay on or around this fire-bed, but its origin was plain. Below this level was fine, clean, yellow sand; above it, the earth from the sides. On the same level were several pieces of pottery, fragments from large vessels. The unchanged sand was loose and easily dug; that which was burned was compact, and gave forth a gritty sound and sensation as it was penetrated by the tools. A skull, quite solid, was picked up on the surface among the weeds a few feet from this pit; but no place could be found from which it was likely to have come.

About a hundred yards above the outlet of the lake, lying under three feet of earth and at the level of the topmost gravel layer of the beach, was a fire-place of flat stones, exactly similar to the kind now in use among the Goldi. Apparently it was constructed when the bed of gravel and sand on which it rested was the highest portion of the beach, and was since covered by the alluvium; at least there was no indication that the overlying earth had ever been disturbed since it was deposited by the water. The slabs were almost in their proper order; there were some traces of other fires in the earth above them, though no stones were found about the latter.

At several other places along the foot of the bank, within a mile of this fire-place others much like it were unearthed at about the same depth. Two of them were cleared out, but no remains of any

kind were found in or about them. Neither could anything be found on the beach except two fragments of pottery and a rude, unfinished, chipped celt.

At Belgo and Halba the river is fully two miles wide ; on an island near the farther side are about 20 house-pits, smaller and shallower than those at the villages. In one, which was cleared out, a flue was found, made of flat stones, just as flues in that region are constructed now. It was covered with five or six inches of earth, probably sedimentary, as the river has flooded the site twice in the last forty years. Portions of two skeletons were found in the river bank where it had caved away. They were just under the sod ; the bones looked quite fresh, and the birch box in which they lay was only slightly touched with decay. A skull, possibly from one of these skeletons, was picked up on the beach ; and a great many potsherds also were found. A Chinese merchant who inspected the latter material said that most of it was of Chinese (Manchurian ?) though some of it was of Goldi manufacture. The oldest man in Belgo does not remember when any one lived on the island. He did not know his age, but his daughter claimed to be more than eighty, and looked it.

At Verchne-Tombovsk, nine versts below Belgo, human remains were exhumed by some workmen in excavating for an ice-house on the point of a terrace where a small stream flows into the Amur. No information could be secured from the men beyond the fact of the bones having been discovered about four feet beneath the surface. At the same time, while a drainage trench was being dug around the ice-house, a fire-place and flue were unearthed near the river bank. They were practically destroyed by the trenching, but enough remained to show that they were of the type now in use. The natives say a village formerly stood here, but that many inhabitants died of smallpox "before the Russians came," and the survivors moved up the river and established the village of Belgo.

Several houses having been erected on this old village-site, permission for further excavations could be obtained only for a small area on the river bank. Here an ash-bed was found at the depth of sixteen inches ; it was three and a half feet across, five inches thick at the middle, and thinned to an edge on every side. It lay in a

saucer-shaped hole or fire-pit, the earth under the central portion having burned red to a further depth of three or four inches. Some fragments of pottery and a piece of slate rubbing-stone were found among the ashes. A foot from the edge of the fire-pit and lower than its bottom, or at a total depth of about two feet, was a large polishing or sharpening stone with a wide hollow in each face, and a narrow, deep groove alongside one of them.

Twenty versts below Verchne-Tombovsk, on the opposite side of the river, near Chanka, house-pits occur; high grass and weeds prevented their number being ascertained. There are also two earth mounds about three feet high, through one of which a trench was dug. The first foot excavated was of earth; this rested on a mass of birch-bark scraps among which were some pieces of wood, including parts of a spoon and of a small human effigy. It is customary among the Goldi, when making domestic articles of such material, to throw all the refuse in a heap near the house. The Russians sometimes take advantage of this custom to secure foundations for haystacks, increasing the elevation, if necessary, by piling on earth; such were the origin and use of these mounds.

At Onda, on the right bank of the Amur, is the first beach for several miles. Fragments of old pottery were scattered among the gravel on the shore. At the water's edge near the village were two small severed bushes or branches struck into the gravel, with the leaves still clinging to the twigs, though quite dry. Half-way up the beach were two more such bushes; at the top of the bank, in the edge of the brush, two more. They seemed to be intended to mark a pathway. Beyond the last two, in an open or cleared space of not more than a square yard, the end of a stout stick pushed or driven deep into the ground stood about thirty inches high. Stick and bushes all had little bunches of shavings tied to them. Some yards away, the end of a coffin was projecting from the low bank, the boards being but very slightly decayed. In it was a skeleton with shreds of decayed flesh still clinging to the bones. A modern Chinese or Japanese pipe and a copper vessel of a kind in common use for heating vodka were with the remains.

Nothing worthy of mention was found between here and the mouth of the Garoon, which comes in on the left some miles below.

A large island at the mouth of this stream causes it to discharge through two channels. On the left bank of the lower mouth are three house-pits. They are evidently quite recent, as the walls have suffered very little from erosion and the corner posts are still standing, solid and strong.

Just below middle Tombovsk notched sinkers were found on the beach near the bank; these may have belonged to any age. The Goldi use many such sinkers.

On the left bank, about three versts below Holbuka, at the lower end of a ridge a mile long, with low swampy land back of it, are twelve or fourteen house-pits. These are from 15 to 35 feet across, 2 to 4 feet deep, and 30 to 60 feet higher than the level of the beach — the first house-pits yet seen which are entirely above overflow. Pottery fragments also were found. This ridge may be the remains of an island; but it has every appearance of being due to the combined action of waves and winds.

On the right bank, just above the mouth of the Nyung-Nyu, is a house-pit; there may be others. Oftentimes, in the coarse, rank grass, which is from four to seven feet high on the flat lands, and stands as thick as timothy in a meadow, one discovers depressions only by falling or sliding into them; and there is no certain way of determining when the last one has been found. Immediately below Nyung-Nyu, at a single hut marked on charts as the village of that name, are several house-pits. They stand on a former bank of the Amur, with a gentle slope down to a slight bayou in front; but the site is now shut off from the water by a great sand ridge formed by the waves or wind, or both, since the village was settled. These are apparently the most ancient house-pits found, so far, on the trip; but surface changes are very rapid in the shifting soils and sands of the Amur valley.

On the right bank of the great river, five miles above lower Tombovsk, is a terrace rising thirty feet above overflow. It is level on top, half a mile long, and 500 feet wide at the broadest part. The river now flows 80 yards from its foot; the intervening space is a low meadow, built up by flood action on the former gravel beach. An extensive swamp stretches between the terrace and the mountains in the rear. Scattered about here are 48 house-pits, many of them 40 to 50 feet across and 3 to 5 feet deep.

Nearly half a mile below this terrace, separated from it by a little stream issuing from a swamp, is a small sand ridge, with the front nearly vertical from wave action during high water. It is probably the last remnant of an island, and will soon disappear. Between its base and the water extends a mass of gravel and bowlders, among which are thousands of pebbles of very hard blue slate and other stone suitable for implements ; most of these are of such shape and size that but little labor would have been required to convert them into tools or weapons adapted to primitive needs. Many pieces showed marks of work, among them small scrapers or celts of slate, now for the first time observed, and notched sinkers. Fragments of pottery also were found.

On the left bank of the Amur, nearly opposite this place, begins another terrace or ridge, thirty feet high, with a swamp back of it. All such ridges are similar in appearance to those found along lake margins, and are formed in the same manner. The Amur in many places has a width of two miles or more while within its banks, and during floods attains a velocity of eight or ten miles an hour. It is stated by persons familiar with the river at all seasons, that in places where there is a rocky bottom and consequently a greater incline, a rate of fifteen miles an hour is reached in the channel in time of highest spring floods. Such a torrent, when opposed by a strong wind, has a swell like the ocean. The water is then thick with sediment which is whirled into the eddies and piled in calmer places along the shores, forming great bars and tow-heads ; when the waters recede and these dry out, the winds carry the sand farther inland and in time large tracts may be covered by it to a considerable depth.

The ridge or dune last mentioned, whose lower point is about four miles above lower Tombovsk, is nearly three-fourths of a mile long, and contains house-pits along its entire length. There are more than a hundred from 30 to 50 feet across and up to 6 feet deep ; and many others which may be the sites of small huts or only large "borrow-pits." This village-site has not been inhabited within the memory of any one now living ; the natives have a tradition, however, that a large number of their people formerly lived on the spot.

At the lower end of this dune is a swale, separating it from a ridge 50 feet high, and sloping steeply on both sides. It is not composed of sand, like the other, but is a spur projecting from a high hill. In a line on its crest, which is only wide enough to afford them room, are five or six pits, scarcely of sufficient size to mark a hut-site, and at some distance from the river. They may be ancient traps or pit-falls.

On the same side, a mile below, is a lagoon of thirty or forty acres. A dune running out from a low hill of native soil nearly shuts off this lagoon from the river, leaving only a narrow outlet along the upper side. On the higher part of the dune and extending to the adjacent slope of the hill, is a collection of a dozen or more house-pits; they are from 30 to 60 feet above the water. This is known to be the site of a recent Goldi village. A native said he had been among the people at the time it was occupied, and that it was abandoned about twenty years before. In all essential respects it is the same as others examined.

Two miles above lower Tombovsk the Coolgoo river flows into the Amur; on the lower side of the junction are five or six house-pits.

Three versts below lower Tombovsk, on the same side, is a dune or ridge made by the river; it is on a foundation of sand and fine gravel containing slate pebbles. The latter were utilized to some extent for making implements, as unfinished or broken ones were found, along with fragments of pottery. A single house-pit was located behind the dune.

Seven versts below this, on the left, are several house-pits at the mouth of a small stream coming in from the Stone Man mountain. On top of this mountain are three great masses of rock, portions of dykes. They are visible for more than forty miles up or down the river. Tradition has it that in ages past a great Goldi chief went up here with his dog in pursuit of a bear. For some reason all were changed into stone. Viewed from a certain point the "man" has a striking resemblance to a statue in classic costume, while the "bear" looks very much like a sculpture of that animal gazing back over a pile of stones at his pursuer. The "dog" has no likeness to anything in particular. Many persons have

attempted to reach the top of the mountain where the figures are, but no one has ever succeeded.

Nothing was found between here and the mouth of the Sheleko river; on the upper side of this stream, at the site of an abandoned Russian village, are five house-pits. A small celt-scraper was found near by, on the beach.

Five versts farther down the Amur is the recently abandoned native village of Hotzko. Here, on both sides of a little stream, are house-pits, overgrown as in other places.

Four versts lower is another abandoned village-site. The land about it was cultivated for some years by Russian colonists who kept for their town its native name of Ca. Like most government colonies, this one soon perished, through agencies that seem inseparable from pauper, penal, or subsidized communities, and the only inhabitant now is a man who sells wood to the steamboats and cuts hay from the old clearing. There are about 80 house-pits here, besides numerous borrow-pits, so that at one time Ca must have boasted a considerable population. One of these pits, measuring 38 feet square between outside corners of the embankment, was trenched across. The ridge was of a clayey nature, proving it to be the mud plastering of the walls. Remains of a post were found going down into the earth below the wall. Farther within were four rows of smoke-blackened stones, forming three flues. Nothing was found in the central area except a few scattered potsherds; these, being near the surface, may have been gathered up in the earth forming the roof, and fallen in with it. On reaching the opposite side, three rows of stones were found, forming two flues. The distance from outside to outside of these stones was 34 feet, which thus represents the inner measurement of the house. Natives say that "a long time ago" (this means with them any time prior to the Russian occupancy) very many people lived here. A "great sickness" fell upon the community, from which most of them died. The survivors, as soon as they were able, moved away. The disease was probably smallpox; it raged in 1874 and again in 1879, and it is said that a similar but more deadly pestilence occurred many years ago throughout the valley. Search was made for a burial-place, but no signs of one could be discovered. Until recent years

the natives — or the Gilyaks, at least — did not inter the dead, but either burned them or laid them on the ground, scantily covered with old clothing, grass, and brush.

Near the upper end of an island whose head is twelve versts below Loocheeteska, is a single house-pit ; a verst farther are seven or eight. On the lower end of the island is the native village of Gassan, recently settled.

There is nothing else until the abandoned village of Ere, three versts below Seleonepar, is reached ; here are 18 or 20 house-pits, some of them 40 feet across and 4 feet deep. In two of them the stone-flue arrangement is quite easily traced, so they must be comparatively recent. At this place a grave was opened ; the body had been placed in a strong pine box and buried two feet deep. As the interment was of a late date, we did not disturb the remains.

From Seleonepar to the mouth of the Amur, only Gilyak villages are found. Above the Garoon river, all are Goldi ; while both tribes intermingle between these points.

From Ere, for a hundred miles or more, on the left side of the Amur is a succession of lagoons, swamps, creeks, bayous, and islands, stretching in some places fully twenty miles inland to the mountains, and all subject to frequent overflow. No one lives among them, and no one ventures into them except a few hunters, fishers, or hay cutters, and these for only a short time. On the right side there are many more bluffs than above Ere, and where good beaches or bottom lands occur there is usually some feature that makes residence unpleasant or inconvenient. Consequently, but few villages are to be found. Sometimes there is not a habitable spot for ten miles at a stretch.

Five miles above Nyata is a sand dune a few feet above overflow. House-pits extend fully a fourth of a mile along its top ; some of them are four feet deep. In two or three are remains of posts and poles, indicating possibly more modern huts on the older sites. A few cross-sections show, on account of the caving of the bank ; the construction is the same as in the house-pits which were excavated. Some potsherds, and a small pot nearly whole, were found on the shore.

About two and a half miles below Nyata, on a low bluff on the

lower side of a river bearing the same name, are ten house-pits, one of them fully 60 feet across.

Four miles below the mouth of Poolsa river are two pits on a bluff; and two versts below these, above overflow, are eight others.

From here to Sophisk there are only low islands and marshy shores or low bluffs. No spot exists where there is a safe mooring-place for river craft of any sort, or any site where a house could stand. The river divides into scores of channels so intricate and so continuously shifting in direction and depth that even steamboat pilots are often at a loss to know the proper course. The dense growth of willow and birch shuts off every view beyond the nearest shore. In a small boat one soon finds himself as bewildered and completely lost as if in a trackless mountain region, and can do nothing but drift with the current until he finds his bearings again.

Ten versts above Sophisk a headland juts out into the river, causing a violent whirlpool where waves toss a canoe about as in a storm at sea. On a narrow beach of sand behind this point lies a large boulder, probably carried thither by floating ice, as it is composed of material different from any natural formation in the vicinity. One side of this boulder has been dressed into a flat triangular surface, measuring nearly five feet on each edge. Near the apex a human face is formed by deeply incised lines; this is provided with a crown or head-dress. Below this, near the center of the smoothed surface, are two other heads, without covering. One has two parallel lines across the middle of the face. The other has V-shaped incisions extending from each nostril over the cheeks; from the glabella upward; and from the middle of each eye-brow outward. Farther down, across the lower part of the stone, are two rows of what seem to be only vertical lines; but they are probably remains of an inscription partially obliterated by sand scouring, as the stone is frequently under water. A priest long resident in Siberia and Manchuria says the whole drawing is the symbol of the Chinese Water God, or God of the Waters. There is certainly no place on the lower Amur where voyagers in small boats have more need of his good offices.

The maps show a native village where Sophisk stands; but there is now no indication that it ever existed.

From Sophisk to Marinsk only two places are fit for habitation. One is a long, high dune, separating Lake Lada from the river. Natives reported house-pits on this dune, but none could be found. The other locality is at the outlet of Lake Lada, two versts above Marinsk ; there is a native village here, but no evidence of earlier occupancy.

Three versts below Marinsk, on an island of several thousand acres mostly subject to overflow, is a ridge or wind dune nearly a hundred feet high in places and covering an area of at least half a square mile. On the river side this is cut away to a bluff as steep as the character of the material (sand and silt) will permit. On the beach at the upper end of this bluff were some pottery fragments.

Passing from this point between low banks, no signs of life are to be observed until at the two native villages of Bulou, standing on little terraces below the outlet of a lake. There are no house-pits.

A mile below Mongol a small stream enters the Amur. On the lower side is a dry terrace, scattered about on which are many house-pits, some of them the largest yet observed. Two are in natural depressions resembling sinkholes but closed at the bottom. The slope of the terrace reaches down to a swale fifty yards wide, beyond which is a gravel ridge of the same breadth piled up by wave action.

Five miles below Kiama is a formation similar to that near Mongol. The natives report house-pits on the terrace and say the "old people" lived there. The stage of the water was such that the place could not be reached either on foot or by boat. There can be no doubt that both these places were abandoned because the formation of the gravel ridges shut the inhabitants off from the river.

At the Goldi village of Pooli, five versts above Bogorobski, on the right bank, are house-pits on a high terrace between two little streams. The present natives, who have lately moved down from the Garoon river, say a Gilyak village formerly stood here.

Scattered along from Bogorobski to a little stream less than half a mile above it, are between twenty and thirty house-pits. Much of the ground is cultivated. Careful search failed to reveal a single object in the vertical bank ; but on the beach were pot-

sherds and many broken or unfinished small stone implements. Nearly all the latter are of slate, and are mostly celts or scrapers, though there were found in addition some side-notched sinkers ; a sharpening stone ; a fragmentary chipped flint, the only piece of this character discovered on the entire trip ; and a stone triangular in section with the faces rubbed smooth and flat.

About half a mile below Bogorobski are seven house-pits 25 to 30 feet across, on a level terrace 50 or 60 feet above the water. The bank in front is very steep, this being the first group found which is at all difficult of access.

A mile farther down the river, on a terrace above high water, are five or six house-pits on the left, the first observed on this side below the Stone Man mountain. Natives all agree in the statement that there are not, and never have been, any permanent settlements on the east bank of the Amur from Bogorobski to "a long distance above Sophisk." In fact, until the point just described is reached there is no place on the mainland below Loocheetaska where one could be established.

On the lower side of Poolka river, entering the Amur at Greater Mehilovski, at the native village of the same name, are small house-pits on a terrace above overflow. In one, the posts and ground timbers are only partially decayed, so that it must have been abandoned within a few years.

Five versts below here is an abandoned village called Padt, as nearly as the name can be understood. In 1895, while the river was at flood stage, a terrible storm swept over this region. Many of the houses here were destroyed and others injured beyond repair. Such as remain are used as storage rooms for fishing appliances ; but the place will never be occupied again so long as this catastrophe is remembered. Probably very many of the unoccupied villages owe their desertion to a similar cause.

Several house-pits are on a low bluff at the lower end of the village ; bushes and small trees grow all around them, but none of any size are found in the depressions, a fact which indicates a rather late occupancy. In the woods near by are three houses or pens, each about the size of a dog kennel ; each contained a small, erect, draped figure, like a standing doll, with various small articles lying

around it on the floor. In one was a copper pipe; in all were broken china cups, fragments of cloth, and little utensils of bark and wood.

At the village of Akra, a short distance below Boskrecenskoe, is a river of the same name, about three versts in length, flowing out of a lagoon. There are a few house-pits at the mouth of the lagoon. It is reported that worked stones of some kind exist near the head of Akra river; the natives say Russian explorers spent several days hunting for them some years ago, but found nothing.

Just above Douri are pits on overflow ground, and a little way below that village are others on a high terrace.

At Tiir three large dressed square stone columns, the sides covered with inscriptions, stood on the bluff where the church is built. One is now in Khabarovsk, another in Vladivostok. The third, by accident, fell into the river, which is 120 feet deep at the foot of the bluff, and was never recovered. The inscriptions have been deciphered, and, it is claimed, are to the effect that Genghis Khan extended his conquests to this point. It is reported that inscribed stones are standing about 70 versts up the Amgoon river, which joins the Amur opposite Tiir; some Russians, presumably the same party that went to the head of Akra river, made a search but were unable to find them.

Many house-pits are on the gently-sloping hillside back of the village. A Gilyak, in leveling off a place to build on, found a Chinese brick a foot beneath the surface, and three feet below this a layer, scarcely decayed, of birch bark. This position is near the foot of a hill, however, so the "find" may not be of great age.

The remains of an extensive town are on the slope of the hill next below Tiir. There are several long streets, ditches for draining them, and square house-sites somewhat elevated. Tiles from roofs strew the ground in places. There is also an irregular mound of earth and stones, some of the latter dressed, which is supposed to be the remains of a "church." Much of it has been dug away by relic seekers, but nothing worthy of mention ever rewarded their search. There can be no question that a populous Chinese or Manchu settlement flourished here at some time in the distant past; but nothing has been discovered on which to base a conjecture as to the period of its existence.

At Coo, 24 versts below Tiir, are about 20 house-pits above high water. One is nearly 70 feet across. A very old man said these "yama" looked "just so" when he was a boy, and that they marked the site of old-time Gilyak houses.

At Cheboc the Amur makes its final turn eastward to the sea. It sweeps at an acute angle around a granite bluff fifty feet high, whose top can be reached only by two or three paths eroded in crevices of the rock. On its undulating surface is a considerable Gilyak town, the only one found under such conditions. The excellent beach at the foot of the bluff is probably considered sufficient compensation for the difficulty of reaching the village. Among the present domiciles are several house-pits; but they may mark only older residences of the same people. At one of them the pine-trunk chimney is still standing. Some of the modern houses are in various stages of decay; in a short time, when all the woodwork shall have disappeared and the site become overgrown with bushes, they will have the same appearance as these seemingly ancient dwellings.

At this town thirteen bears were confined in pens, awaiting their turn to be sacrificed. There is a vast amount of ceremony connected with this religious rite, but the bears are eaten at the end.

From here to Nikolaevsk the entire country is unsuited for a life like that to which the natives incline. There are few spots where good landing places are to be had, and the ground is either rocky or swampy, so that excavation for house sites is not feasible. The few houses existing are in such situations that, if abandoned, not a trace of them could be found in another generation; they are intended mostly for temporary use. If there was a settlement in the vicinity of Nikolaevsk, all vestiges of it are now effaced.

At the village of Chabac, on the left bank, 35 versts below Nikolaevsk, on a gentle incline back of a bluff 40 feet high, are several house-pits. The area on which they are found contains only small scattering bushes, while all around are trees of moderate size. These house-pits are therefore probably recent.

About two miles below Chabac there is a gradual ascent from a small brook; it is broken in three or four places by small terraces, only a square rod or two at any point being level. On this slope

are 10 or 12 house-pits in a pine forest. A native said a Russian dug here in 1895 and found "some pots" — potsherds, probably. The same report is made in regard to the pits beyond Cape Puah, mentioned later.

On the right bank of the Amur there are no remains between Nikolaevsk and the native village of Goolyaka. On a little bluff at the lower end of this village several large houses are falling into ruins. Fifty years from now, only brush-covered depressions will be left to suggest their former existence.

Immediately below Goolyaka is a large bight into the head of which flows a small brook. On the upper side of this are two groups of house-pits. One, consisting of 11 depressions, extends about 250 yards along a bank subject to frequent overflow. Some flues are still to be seen among them, though no timbers now remain. The other group is back of this, on a terrace about 20 feet higher; there are at least 25 of the pits, which seem of greater age than those just mentioned. It is probable the ground on which the first group occurs was a beach at the time the upper group was occupied; being covered with silt at high water, it no longer afforded a convenient landing-place, and was utilized for residence purposes, with the abandonment of the older site.

On the lower side of the brook are six house-pits; these are in the forest, with pine trees fully two feet in diameter growing over them.

Along the lower side of Cape Vahs, which forms the eastern boundary of this bight, are 10 house-pits, apparently of recent origin. The earth on the inner side of the embankment has not yet attained its final slope.

Several miles farther down the Amur, nearly opposite the village of Nahleo, is a similar bight receiving a creek. On the upper side of this creek, in dense forest, are at least a dozen house-pits. Pines more than two feet in diameter are growing among them, the largest one observed standing on an embankment. Moss covers the ground to a depth of several inches. The pits extend fully a hundred yards back from the river bank. A short distance west of these, beyond a little ravine, are three house-pits. In one, the timbers are only partially decayed and the pine-trunk chimney is still standing.

There is nothing more to be found above the mouth of the river.

Outside of this, the coast along the Channel of Tartary is a succession of cliffs, with long capes or points of rock projecting at intervals. Occasionally, between these, are areas of beach or level lands. Nearly all of the latter, however, are inundated at the highest tides, and waves beat over them with great force. The bays are shallow and many of them are strewn with huge rocks carried in by the floating ice, so that only at high tide is it possible for even a canoe to venture on them with safety.

South of the river habitable spots cease within ten or twelve miles; there are some small fishing villages on this side, but they have scant room. No house-pits exist.

North of the river there are several good camping-places where the native or the Japanese fishermen spend the fishing season; but they leave before cold weather sets in. The largest is on the north side of Cape Puah, the last headland south of the promontory between Okhotsk sea and the Channel. Here is the finest beach on the coast, and as it is somewhat sheltered from the waves, permanent houses have been erected by some Gilyak families who spend the summer in them. In autumn they move across the peninsula to another cluster of houses, at some distance from the open water but on a narrow passage which cuts off a large marshy island, where they remain until the tides and storms of spring have spent their force.

Seven versts north of Cape Puah are eight or ten house-pits on a gravel ridge. The sea is cutting away the bank and has partially destroyed two of them. In two the timbers in part remain; in two others the flues are still to be seen. In all respects these houses were evidently like those now in use.

A verst farther are three house-pits, close to the beach, in a pine forest. The trees are small, apparently of less than a century's growth. A hundred yards back of them, on somewhat higher ground and in larger timber, are three other pits. One of the latter, not more than 30 feet across, is fully 6 feet deep. Evidently the ground in front, on which the young pines are growing, has been built up since the pits behind were in use, a condition similar to that below Goolyaka.

A mile north of the last mentioned remains are four house-pits from 20 to 25 feet in diameter and 3 to 4 feet deep, which hold their square shape better than any observed elsewhere. They are covered with a heavy growth of moss and peat, which has accumulated to a thickness of from two to three feet on the gravel bank in front of them.

Still north of here, in the Channel and in the Okhotsk sea, are islands on which are Gilyak villages, permanently occupied. Several attempts were made to reach them, but all failed on account of the rough weather; and as the season for the autumn typhoon was now at hand, work had to be closed.

Conclusions

On the whole, there seems no reason for believing that a manner of living and a degree of culture materially different from those now prevailing in the region, have existed in the lower Amur valley since prehistoric times. Other, earlier, people there may have been, but they have left no traces. So far as ancient remains are concerned, an investigator finds nothing on which to establish a working theory as to migrations in any direction. All existing conditions, as they are disclosed by minute examination, are explicable by reference to known habits of the present inhabitants or to the Manchu whose possession of the region has lately terminated. With no mounds, no cairns, no shell-heaps, no burial-grounds, no evidence of agriculture, scarcely any stone implements or pottery, and with such specimens as exist in no wise distinctive—the archeologist stands helpless. The problems of migrations and of ethnic relations must be reached in some other way, if they are to be reached at all.

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